



UNITED STATES PATENT AND TRADEMARK OFFICE

SW

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/069,588 | 02/27/2002 | Keizo Akutagawa | Q68338 | 3867 |

7590 02/25/2004
Sughrue Mion Zinn
Macpeak & Seas
2100 Pennsylvania Avenue NW
Washington, DC 20037

| |
|----------|
| EXAMINER |
|----------|

ENGLISH, PETER C

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

3616

DATE MAILED: 02/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/069,588

Applicant(s)

AKUTAGAWA ET AL.

Examiner

Peter C. English

Art Unit

3616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. This application contains claims 8-10 drawn to an invention nonelected with traverse in Paper No. 6. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Drawings

2. The corrected drawing sheets filed on 22 December 2003 have been approved.

Specification

3. The amendment filed 22 December 2003 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: the description of the variable α as corresponding to "the slip angle", which has been added to the paragraph beginning at page 18, line 19. Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

4. Claims 3 and 7 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification fails to provide an adequate description of the manner in which vibration is applied in the "width direction" and the "load support direction" of the tire. Specifically, the embodiment of Fig. 7 is described as having an actuator for applying vibration to the tire, but no details are given concerning the construction of the actuator or its interconnection with the tire.

Art Unit: 3616

5. Claims 1 and 3-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, at lines 3-4, "micro-vibration having a higher frequency than a response frequency" is indefinite because it is unclear what constitutes the "response frequency". Though this term is mentioned in the specification, it has not been defined. Since the "response frequency" is undefined, one cannot know what frequency would be "higher" than the response frequency. Therefore, it is impossible to determine the frequency level defined by the claim.

In claim 7, at line 2, "a phase of deformation of the vibration" is indefinite because it is unclear how vibration can be deformed. The examiner suggests: at line 2, delete "deformation of".

In claim 7, at lines 4-5, "minimize a rolling resistance of the tire caused by friction between the tire and the surface of a road" is inaccurate. See page 22, line 26 to page 23, line 11 of the specification. The examiner suggests that lines 4-5 be replaced with "minimize vibrational disturbances of the tire caused by irregularities in the surface of a road."

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 3 and 7 (as best understood) are rejected under 35 U.S.C. 102(b) as being anticipated by Baun (DE 3610519). Baun discloses a control system for increasing the friction force between a tire and a road surface. The friction force is increased by using an actuator to apply a medium to high frequency vibration to the tire. See the abstract and Figs. 3 and 4. Baun's high frequency vibration is considered to be "higher" than a given response frequency of the vehicle, as is broadly claimed.

Art Unit: 3616

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baun (DE 3610519). Baun (discussed above) discloses the use of a medium to high frequency vibration, but fails to specify the frequency range of the vibration. It would have been obvious to one of ordinary skill in the art to select the frequency ranges identified in claims 4-6 in order to maximize the friction force between the tire and the road surface. Further, the selection of optimum values within prior art general conditions is generally recognized as being within the level of ordinary skill in the art.

Response to Arguments

11. Applicant's arguments filed 22 December 2003 have been fully considered but they are not persuasive. Applicant argues that the rejection under 35 USC 112, first paragraph is improper because "width direction" and "load support direction" are mentioned in the specification, and because one of ordinary skill in the art would know how to construct an actuator to apply vibration in these directions. This is not persuasive because the rejection is not based upon the enablement requirement of 35 USC 112, first paragraph, but instead is

Art Unit: 3616

based upon the written restriction requirement. In exchange for the patent protection sought, applicant is obligated to provide a complete description of the manner in which the invention is embodied. In the instant case, applicant has failed to do so. The public can only speculate as to how the invention would be embodied.

Applicant argues that the "response frequency" of claim 1 is not indefinite. In support of this argument, applicant states that "a response frequency is a dynamic response exhibited, for example, in yaw rate". However, this definition is not found in the original disclosure. The metes and bounds of claim 1 cannot be determined because there is no way to determine what frequency is "higher" than the undefined response frequency.

Applicant argues that Baun fails to teach applying vibration at a frequency higher than a response frequency. The examiner disagrees. Since Baun teaches a high frequency vibration, and since the "response frequency" is undefined, the vibration of Baun is inherently higher than some "response frequency" (e.g., a response frequency caused by road irregularities having a low amplitude and a low frequency).

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

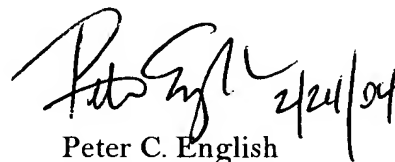
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter C. English whose telephone number is 703-308-1377. The examiner can normally be reached on Monday through Thursday (7:00 AM - 5:00 PM).

Art Unit: 3616

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul N. Dickson can be reached on 703-308-2089. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Peter C. English", followed by the date "2/24/04".

Peter C. English
Primary Examiner
Art Unit 3616

pe
24 February 2004